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10/517,500	12/10/2004	Tetsujiro Kondo	450100-04629	1276

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EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT	PAPER NUMBER
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2622

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10/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,500	Applicant(s) KONDO ET AL.	
	Examiner LUONG T. NGUYEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,8-13,18,19,23-28,30,37,38,42-46 and 48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,14-17,29,31-35 and 49 is/are rejected.
- 7) ☒ Claim(s) 20-22,36,39-41 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/07;12/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's argument of election requirement in the reply filed on 2/19/2008 and 6/3/2008 is acknowledged. The Examiner agrees with the Applicant to reformulate the species in accordance with the following listing as indicated by the applicants on 2/19/2008:

Species I, illustrated in Figs. 3, 6-11 and 25 and on which claims 1-4, 14-19, 29-38 and 47-49 read.

Species II, illustrated in Figs. 3, 14-17 and 25 and on which claims 1-2, 5-7, 14-17, 20-22, 29, 31-36, 39-41, 47 and 49 read.

Species III, illustrated in Figs. 3, 18-19 and 25 and on which claims 1-2, 8, 14-17, 23, 29, 31-36, 42, 47 and 49 read.

Species IV, illustrated in Figs. 3, 20 and 25 and on which claims 1-2, 9-10, 14-17, 24-25, 29, 31-36, 43-44, 47 and 49 read.

Species V, illustrated in Figs. 3, 21 and 25 and on which claims 1-2, 9, 11-17, 24, 26-29, 31-36, 43, 45-47 and 49 read.

Species VI, illustrated in Figs. 3, 22 and 25 and on which claims 1-2, 9, 11-17, 24, 26-29, 31-36, 43, 45-47 and 49 read.

Note that the Applicants indicated the election of claims 1-2, 5-7, 14-17, 20-22, 29, 31-36, 39-41, 47 and 49 without traverse on the reply filed on 2/19/2008.

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2. Applicant's election without traverse of Species IV upon which claims 1-2, 5-7, 14-17, 20-22, 29, 31-36, 39-41, 47 and 49 read in the reply filed on 6/3/2008 and 2/19/2008 (now read as Species II, illustrated in Figs. 3, 14-17, 25 and on which claims 1-2, 5-7, 14-17, 20-22, 29, 31-36, 39-41, 47 and 49 read) is acknowledged.

3. Claims 3-4, 8-13, 18-19, 23-28, 30, 37-38, 42-46, 48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/3/2008 and 2/19/2008.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 32, 33, 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamagishi (US 5,855,425).

Regarding claim 32, Hamagishi discloses a stereoscopic display, which comprises:

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at least one light-emitting unit (first projector 1L, second 1R, figure 1, column 4, lines 7-35) for emitting a light beam corresponding to the image of the object;

a display optical unit (screen 2, figure 1, column 4, lines 19-67) for reflecting or transmitting the light beam emitted from said at least one light-emitting unit;

a display controller (driving and control unit 12, figure 1, column 4, lines 52-67) for controlling the display optical unit to allow the display optical unit to operate in a periodical manner; and

a display driver (driving and control unit 12, figure 1, column 4, lines 52-67) for driving the display optical unit based on the control operation by the display controller.

Regarding claim 33, Hamagishi discloses the display optical unit changes an optical path of the light beam emitted from said at least one light-emitting unit (see figure 1).

Claim 49 is a method claim of apparatus claim 32. Therefore, see Examiner's comments regarding claim 32.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1, 2, 5, 7, 14, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532).

Regarding claim 1, Silverstein discloses an image-capturing apparatus comprising:
an image-capturing optical unit micro-lens 16, figure 1, column 3, lines 1-16) which reflects or transmits a light beam from an object;

an image-capturing driver (actuator 22, figure 1, column 3, lines 59-67) for driving the image-capturing optical unit based on the control operation by the image-capturing controller;
and

at least one image-capturing unit (light sensor array 20, figure 1, column 3, line 36 – column 4, line 8) which receives the light beam from the object entering via the image-capturing optical unit operating periodically so as to capture an image of the object.

Silverstein fails to specifically disclose an image-capturing controller for controlling the image-capturing optical unit to allow the image-capturing optical unit to operate in a periodical manner. However, Official Notice is taken that such image-capturing controller is well known in the art as a way to control an operation of an actuator. It would have been obvious to include such image-capturing controller into the device of Silverstein in order to control the operation of actuator 22.

Regarding claim 2, Silverstein discloses wherein the image-capturing optical unit changes an optical path of the light beam from the object (noted that since the actuator 22 actives and moves the micro-lens array 16 in both horizontal direction as indicated by arrow line 24, the

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optical path of light beam from the object is changed, figure 1, column 3, line 59 – column 4, line 8).

Regarding claim 5, Silverstein discloses wherein the image-capturing optical unit comprises a lenticular-lens (lenticular array 16, figures 1-2, column 3, lines 19-29) assembly in which a plurality of semi-cylindrical lenses are arrayed,

wherein the image-capturing controller controls the lenticular-lens assembly in a periodical manner such that the semi-cylindrical lenses in the lenticular-lens assembly are shifted periodically (column 3, line 59 - column 4, line 8).

Regarding claim 7, Silverstein discloses wherein the semi-cylindrical lenses in the lenticular-lens assembly are arrayed parallel to one another in the same plane while each semi-cylindrical lens extends longitudinally in the vertical direction (figure 2), and

wherein the image-capturing controller oscillates the lenticular-lens assembly horizontally in a periodical manner (column 3, line 59 – column 4, lines 8).

Regarding claim 14, Silverstein fails to specifically disclose an output unit for outputting drive data and an image data of the object. However, Official Notice is taken that it is well known in the art to include such output unit into the device of Silverstein in order to read out image data for further processing such as displaying on an image display apparatus.

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Claim 31 is a method claim of apparatus claim 1. Therefore, see Examiner's comment regarding claim 1.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Vick (US 4,993,790).

Regarding claim 6, Silverstein fails to specifically disclose the image-capturing optical unit further comprises slits through which the light beam emitted from the object and transmitted through the semi-cylindrical lenses passes. However, Vick discloses a lenticular screen, which comprises a split plate 46 through which the light beam emitted from the object and transmitted through the lenticular 48 (figure 2, column 7, lines 10-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein by the teaching Vick in order to allow light rays from an image focused to viewer's eyes.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Ogino (US 6,762,794).

Regarding claim 15, Silverstein fails to specifically to disclose a display device. However, Ogino discloses an image pick-up apparatus for stereoscope, in which images captured by stereo camera 1 is displayed on image display 2 (figure 1, column 5, lines 30-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

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to modify the device in Silverstein by the teaching Ogino in order to display an image for viewing.

11. Claims 16, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Ogino (US 6,762,794) further in view of Hamagishi (US 5,855,425).

Regarding claim 16, Silverstein and Ogino fail to disclose wherein the display device comprises:

at least one light-emitting unit for emitting a light beam corresponding to the image of the object captured by said at least one image-capturing unit;

a display optical unit for reflecting or transmitting the light beam emitted from said at least one light-emitting unit;

a display controller for controlling the display optical unit to allow the display optical unit to operate in a periodical manner; and

a display driver for driving the display optical unit based on the control operation by the display controller.

However, Hamagishi discloses a stereoscopic display, which comprises:

at least one light-emitting unit (first projector 1L, second 1R, figure 1, column 4, lines 7-35) for emitting a light beam corresponding to the image of the object captured by said at least one image-capturing unit;

a display optical unit (screen 2, figure 1, column 4, lines 19-67) for reflecting or transmitting the light beam emitted from said at least one light-emitting unit;

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a display controller (driving and control unit 12, figure 1, column 4, lines 52-67) for controlling the display optical unit to allow the display optical unit to operate in a periodical manner; and

a display driver (driving and control unit 12, figure 1, column 4, lines 52-67) for driving the display optical unit based on the control operation by the display controller.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein and Ogino by the teaching of Hamagishi in order to display a stereoscopic image.

Regarding claim 29, Silverstein, Ogino and Hamgishi fail to specifically disclose an output unit for outputting drive data and an image data of the object, and wherein the display controller allows the display driver to drive the display optical unit based on the drive data. However, Official Notice is taken that it is well known in the art to include such output unit into the device of Silverstein in order to read out image data for further processing such as displaying on an image display apparatus.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Ogino (US 6,762,794) and Hamagishi (US 5,855,425) further in view of Veligdan et al. (US 6,755,534).

Regarding claim 17, Silverstein, Ogino and Hamagishi fail to disclose wherein the display device further comprises a diffuser which diffuses the light beam corresponding to the

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image of the object received via the display optical unit, which operates in a periodical manner, so as to display the image of the object. However, Veligdan et al. discloses a prismatic optical display, which comprises diffuser 24a (figure 3, column 6, lines 20-28, 48-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein, Ogino and Hamagishi by the teaching of Veligdan et al. in order to diffuse light beam corresponding to an image.

13. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamagishi (US 5,855,425) in view of Ross et al. (US 6,827,442).

Regarding claim 34, Hamagishi fail to disclose wherein the image of the object is equivalent to an image of the object captured by an image-capturing device. However, Ross et al. disclose an apparatus in which a camera 160 captures an image of a scene 162 that is the projected by the projector 164 (figure 5, column 8, lines 33-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Hamagishi by the teaching of Ross et al. in order to allow a user view a better quality image.

14. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamagishi (US 5,855,425) in view of Ross et al. (US 6,927,442) further in view of Veligdan et al. (US 6,755,534).

Regarding claim 35, Hamagishi and Ross et al. fail to disclose a diffuser which diffuses the light beam corresponding to the image of the object received via the display optical unit,

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which operates in a periodical manner, so as to display the image of the object. However, Veligdan et al. discloses a prismatic optical display, which comprises diffuser 24a (figure 3, column 6, lines 20-28, 48-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Hamagishi and Ross et al. by the teaching of Veligdan et al. in order to diffuse light beam corresponding to an image.

Allowable Subject Matter

15. Claims 20-22, 36, 39-41, 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571)272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LTN
9/28/08

/LUONG T NGUYEN/
Examiner, Art Unit 2622